Proceedings of the Iowa Academy of Science

Volume 34 | Annual Issue Article 112

1927

The Metabolic Rates of Amblystoma Larvae

O. M. Helff
State University of Iowa

THE METABOLIC RATES OF AMBLYSTOMA LARVAE

O. M. HELFF

Introduced by GEO. E. POTTER

1. The oxygen consumption per gram weight, four hours, of five species of Amblystoma larvae was determined by means of the Winkler method and distinct species variations found to exist.

2. The average oxygen consumption of ten A. microstomum larvae was 200 per cent higher than the mean consumption of ten A. tigrinum larvae; 153.2 per cent higher than the mean consumption of ten A. jeffersonianum larvae, and 104.2 per cent higher than the mean consumption of ten A. punctatum larvae.

3. A second series of twelve A. punctatum and twelve A. tigrinum larvae emphasized the results previously obtained that the former species possess approximately a 47 per cent higher oxygen consumption than is true of the latter species.

4. The results obtained indicate that the metabolic rates of Amblystoma larvae are widely divergent and may serve to explain problems of differential growth rates, especially where heteroplastic grafts are concerned. The rather wide individual variations between members of the same species could likewise be applied in interpreting the growth rates of homoplastic grafts.

5. Seventeen axolotl (A. tigrinum) gave approximately the same oxygen consumption as was found to be true for normal A. tigrinum larvae.

6. This fact indicates that the neotonous condition of axolotl cannot be interpreted in the light of a supposed difference in metabolic rate, as compared with normal A. tigrinum larvae.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

EXPERIMENTS ON THE PREVENTION AND RELIEF OF PARATHYROID TETANY

W. F. WENNER

Introduced by GILBERT L. HOUSER

Parathyroidectomized dogs given a five per cent solution of ammonium chloride in 100-cc. doses twice daily may be kept free from tetany for long periods. Once tetany appears, and the serum calcium falls below 7 mgm. per 100 cc., ammonium chloride brings